

REMARKS

Claim 4 is canceled without prejudice, and claim 1 is slightly reworded to emphasize that the spacers were formed simultaneously with forming the electronic layers. Reconsideration and allowance are requested.

Claims 1-21 and 28-34 stand rejected under 35 USC §103(a) as being unpatentable over Akinwande et al. (US 5,646,702) in view of Kajita et al. (US 6,275,280). This rejection is respectfully traversed.

Akinwande describes a field emitter for illuminating pixels in an LCD. The field emitter arrays may be utilized to illuminate each pixel individually or to be a backlight lamp to illuminate the whole display, whether monochrome or color. Akinwande's emphasis is on field emitter array back-lighted liquid crystal displays and not on spacers. In contrast, the claims in this case are directed to an active backplane for use with a spaced-opposed front electrode, which can be used in one non-limiting example application in a spatial light modulator formed using a smectic liquid crystal layer disposed between an active semiconductor backplane and a common front electrode.

The Examiner identifies the substrate 71 in Figure 19 as the claimed backplane with multiple electronic layers 84 and 98 formed thereon. There are problems with this reading. First, Figure 19 is directed to an LCD backlight and not an LCD backplane. Figure 7a of Akinwande shows an LCD backplane. Second, reference numeral 98 is a ray of light and not a second layer of electronic elements. Third, the spacer 99 in Figure 19 is clearly a separate structure that was not formed simultaneously with forming

the electronic elements or electronic element layers. Fourth, the spacer 99 is a dielectric material which is clearly not substantially the same material as in the electronic element(s)/layer(s). In fact, Akinwande's teaching of a different material for the spacers (col. 9, line 35) is a *teaching away* from the claims and from combination with Kajita. Fifth, the spacers 213 in the LC material shown in Figure 5a are not formed on the LCD backplane, but instead are formed on the alignment layers 195 and 197.

Claim 29 recites: "wherein the processes used for making parts of at least one said element are also used simultaneously to form parts of spacers on the backplane laterally spaced from said elements." Kajita describes an LCD with spacers with a particular load compression displacement in the hope of attaining a uniform cell gap. In Figures 9 and 10, it is clear that three spacer layers 21, 23, and 22 are not formed simultaneously with the electronic element(s)/layer(s). So neither Akinwande nor Kajita disclose or suggest this claim feature.

The Examiner contends that the methods of claims 28-31 are "necessitated by the product structures." We disagree. One could form spacers at another time and/or separately as both Akinwande and Kajita in fact do.

Similarly, claim 1 recites:

wherein said first spacer layer is formed from substantially the same material as said first electronic element layer and said second spacer layer is formed from substantially the same material as said second electronic element layer and wherein said first and second spacer layers are in the same order in the spacer as first and second electronic element layers appear in said electrical or electronic elements.

Neither Akinwande nor Kajita disclose or suggest both first and second spacer layers being not only of the same material as the first and second electronic element layers but also the first and second spacer layers being in the same order in the spacer as the first and second electronic element layers appear in electrical or electronic elements.

So even if Akinwande and Kajita could be combined for the sake of argument, the combination fails to disclose the features recited in independent claims 1 and 29. The rejection is also improper because there is no legal motivation to combine Akinwande and Kajita.

The teaching of Kajita is not relevant to the field emitter of Akinwande, and similarly, the field emitter of Akinwande et al. is not relevant to the LCD of Kajita. Thus, a person of ordinary skill in the art would not have been motivated to combine these teachings. One could argue that the skilled person might seek to replace the LCD described with reference to Figure 7 of Akinwande document with that shown in Kajita, or might seek to modify the design of the spacers 213 used in Akinwande's LCD, but that skilled person would not seek to modify Akinwande's field emitter in Figure 19.

Furthermore, Kajita teach that when forming a spacer on a color filter, which is not on a backplane, the spacer can have the same number of colored layers or a single layer. But Kajita offers no other reason for multiple spacer layers other than matching colored filters, and even in that situation, gives no reason as to why more than one layer would be better than one layer.

The main teaching in Kajita is that the spacers should have a particular degree of load compression. With this in mind, Kajita teaches that the preferable materials for the spacer are resins. See column 6, lines 47-60. Thus, the skilled person reading Kajita would be taught that load compression is important, that resins (which clearly can't be used in as electronic layers) are particularly advantageous, and that where different colored layers are required, the spacers may also have different colored layers.

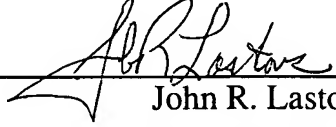
The Examiner notes that Kajita teaches that other spacer materials may be used, and suggests that it would therefore be obvious to modify the spacer design of Akinwande for the purpose of having sufficient load compression. But again, the field emitter in Akinwande is different from a liquid crystal display. The problems of load compression described by Kajita do not apply to Akinwande's field emitter. Still further, Akinwande counsels against such a modification by specifically requiring that the spacer be made of a dielectric material. For at least the reasons articulated above, there would be no reason for the skilled person to combine Kajita with Akinwande.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that all pending claims are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is respectfully requested to contact the undersigned.

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Respectfully submitted,

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